REMARKS

This Request is responsive to the Final Action dated October 31, 2003. Claims 1-18 were pending in the application. In the Office Action, claims 1-18 were rejected. Applicants submit that claims 1-18 are in condition for allowance and request reconsideration and withdrawal of the rejections in light of the following remarks.

§102 and §103 Rejections

Claims 1-14 and 18 were rejected under 35 U.S.C. §102(b) as being anticipated by Wellard et al. (USPN 5,862,477).

Claims 13-17 were rejected under 35 U.S.C. §102(b) as being anticipated by Feng (USPN 5,374,936).

Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Wellard in view of Pelech et al. (USPN 6,243,585).

Claim 10 was rejected under 35 U.S.C. §103(a) as being unpatentable over Wellard in view of Jennings, III (USPN 6,173,191).

Applicants submit that claim 1 is patentable over Wellard.

Applicants' invention as recited in claim 1, is directed toward a method of creating a topology map in a wireless network. The map indicates the quality of connectivity of each network device with all other network devices. More specifically, claim 1 recites:

> Method to create a topology map indicating the quality of connectivity of each network device of a wireless network with all other network devices in said wireless network, characterized by the following steps:
> - performing a measurement phase in which a calibration signal is successively broadcasted by each network device and in which all respective other network devices receiving said calibration signal measure the received signal quality;

- performing a reporting phase in which the measurement results are transmitted from each network device to the network device creating said topology map; and
- performing a creating phase in which said topology map of the network is created within the network device creating said topology map on basis of all received measurement results.

As opposed to the present invention which addresses the problem of improving the quality of connectivity between network devices communicating in a wireless network, e.g., in direct mode, Wellard relates to the detecting of a change in the system topology so as to potentially identify tampering with a system whose placement is restricted by law to protect incumbent users of the frequency band at which the system operates. This vivid distinction in the respective contexts must be kept in mind when assessing the novelty of the present invention, i.e., when interpreting the nomenclature of the claims for the purpose of comparing these with the prior art. Moreover, only hindsight could justify the selection of Wellard as the closest prior art for the assessment of the patentabililty of the present invention.

Applicants note numerous distinction between the disclosure of Wellard and claim 1. For one, Wellard does not teach the creation of a topology map with regard to devices of a wireless network. Instead, as is clearly visible from Wellard's Fig. 1, a signature is generated that is indicative of the signal strength between cordless fixed parts, i.e., base stations, that communicate via a wired infrastructure (cf. column 4, lines 32-34). Consequently, the "signature" of Wellard is not indicative of the quality of connectivity between respective devices of a wireless network in the sense of the present invention.

In addition to the above, Wellard fails to teach the distinct measurement and reporting phases of claim 1, the wireless transmission of measurement results to a wireless network device, nor the creation of a topology map within said network device, the CCU of Wellard being a wired device.

Moreover, Wellard, for reasons of simplicity, teaches against the creation of a topology map on the basis of all received measurement signals (cf. col. 5, lines 50-54).

Moreover, claim 1 is believed to be novel and inventive over the disclosure of Wellard on account of the following, claimed distinctions not yet specifically addressed by the Examiner.

In the Examiner's rejection of claim 1 in view of Wellard, reference is solely made to Fig. 2 of Wellard as regards the feature of a calibration signal "successively broadcasted by each network device." It follows from the above that, if Fig. 2 of Wellard is interpreted as illustrating a broadcasting by each network device, then it must be likewise assumed that solely CFP's 10r-10t constitute network devices. This interpretation is congruent with the other teachings of Wellard, at least as regards CCU 14, since CCU 14 is devoid of broadcasting abilities. In other words, CCU 14 does not constitute a network device in the nomenclature of claim 1.

As is clear, however, *e.g.* from column 5, lines 15-54 or from a comparison of column 5, lines 10-12 and 54-57 with column 3, lines 25-27 of Wellard, the topology of Wellard, described in the second paragraph of column 3 cited by the Examiner, is created by the CCU 14.

Since CCU 14 is not a network device in the sense of the claimed invention, it follows that Wellard fails to teach the claimed reporting phase, wherein measurement

results are transmitted to the network device creating the topology map. Likewise, Wellard fails to teach the claimed creating phase, wherein a topology map is created within a network device.

If, for the sake of argument, it is assumed that CCU 14 constitutes a network device in accordance with the nomenclature of claim 1, then Wellard fails to teach the claimed measurement phase, wherein a calibration signal is successively broadcasted by each network device.

In addition, Wellard fails to teach the claimed creation of a topology map indicating the quality of connectivity of each network device of a wireless network with all other network devices in said wireless network.

In item 8 of the Final Office Action, referring to the creation of a topology map with regard to devices of a wireless network, the Examiner refers to portions of Wellard that recite, "to establish the topology of the system" and "in pico-cellular wireless systems." As regards the latter recitation, however, the full teaching of Wellard is that, "in such a pico-cellular wireless system, each of the cordless fixed parts (CFP's) normally functions as a base station transmitting and receiving signals from a number of cordless portable parts (CPP's) (portable handsets)." Applicant is thus of the firm belief that it is inconsistent with the actual teachings of Wellard to assert that the wireless network of Wellard does not comprise CPP's. Yet since Wellard does not teach creation of a topology map indicating the quality of connectivity of network devices to said CCP's, it appears inappropriate to assert that Wellard teaches the aforementioned topology map with regard to connectivity of each network device with all other network devices.

This argument applies equally to Wellard's failure to teach a broadcasting by each network device or a transmitting from each network device in the claimed measurement and reporting of claim 1, respectively.

As noted in Applicant's previous response, Wellard moreover fails to teach creation of the topology map on the basis of all received measurement results. In this respect, Applicant again makes reference to column 5, lines 52-54 of Wellard, wherein it is solely taught that the combined vectors for at least a sample number of CFP devices form the RSSI signature.

Applicants submit that claim 13 is patentable over Wellard and/or Feng.

Applicants' invention as recited in claim 13, is directed toward a device for a wireless network. More specifically, claim 13 recites:

> Network device for a wireless network, characterized by means to broadcast a calibration signal, to measure a power level of a received calibration signal, and to transmit its measurement results to another network device or to store it internally

Regarding the rejection of claim 13 based on Wellard, Applicants note that Wellard fails to teach the transmission of measurement results, "transmission" being wireless communication in both the nomenclature of the present invention and Wellard. Moreover, Wellard does not teach means for storing the measurement results internally.

In accordance with the nomenclature of claim 13, a network device comprises means for broadcasting a calibration signal, means for measuring a received power level thereof and means for transmitting measurement results to another network device, *i.e.* to another device comprising means for broadcasting a calibration signal, etc. Since it is prescribed that a network device comprise at least these features, a plurality of network

devices in accordance with the present invention can be networked in a manner wherein any network device can take over the role of the central controller. In particular, the role of central controller can be dynamically allocated and if a network device is not currently acting as the central controller, it is capable of "forwarding" its measurement results to another network device.

Wellard does not teach a network device that transmits its measurement results to another network device. Column 5, lines 50-52 of Wellard explicitly teaches that the received signal strength indication (RSSI) data received by each CFP device is recorded by the CCU 14 to provide the RSSI vector for that device. CCU 14, however, does not comprise means for broadcasting a calibration signal and thus, in the nomenclature of claim 13, cannot constitute the claimed network device to which measurement results are transmitted.

In addition to the above, Applicant notes that the term "transmit" designates wireless communications both in Wellard as well as in the present application, but Wellard only teaches wired communication of measurement results between devices, *i.e.* between CFP devices 10a-10f and the CCU 14.

It follows from the above that Wellard fails to teach or suggest a single network device comprising all three of the aforementioned features of claim 13.

Regarding the rejection of claim 13 based on Feng, Applicants generally note that, like Wellard, Feng does not address the problem of improving the quality of connectivity between network devices communicating in a wireless network, e.g., in direct mode, but instead relates to a security system comprising means for accurately determining the position of a portable signal transmitter in two or three dimensions. Specifically, Feng

employs accurate timing mechanisms, signal intensity meters, a central station and several relay stations to measure the propagation delay and/or the signal decay at several locations so as to determine the position of the portable signal transmitter.

Further, Feng does not teach a network device that comprises both means to broadcast a calibration signal and means to measure a power level of a received calibration signal. In accordance with the third embodiment of Feng, i.e., the only embodiment employing intensity meters, a calibration signal is sent out by the central station whereas the calibration signal is received and its intensity is measured by the relay stations. Moreover, Feng does not teach means for storing the measurement results internally.

The Examiner has cited two distinct passages of Feng in his rejection of claim 13, namely column 1, line 65 to column 2, line 2 and column 2, lines 18-21. Applicant notes that the first of these passages refers to a second embodiment whereas the second passage refers to a third embodiment that is wholly distinct from and incompatible with the second embodiment.

In accordance with the second embodiment of Feng, the location of a signal transmitter is determined by means of a highly accurate timer associated with a central station. Since only one highly accurate timer is needed, costs are reduced. Yet since the signal broadcast by the signal transmitter must be measured at at least three distinct locations in order to pinpoint the location of the signal transmitter, it is necessary to relay the signal issued by the signal transmitter to the central station by means of respective relay stations. Consequently, the timed propagation time of the signal from the signal transmitter to a respective relay station is corrupted by the propagation time of the signal

from the relay station to the central station. In order to determine a signal propagation time between the respective relay stations and the central station, *i.e.* to eliminate the corruptive influence of the signal propagation time between the respective relay stations and the central station, the relay stations receive a first calibration signal from the central station and emit a second calibration signal to the central station in reply.

In accordance with the third embodiment of Feng, the location of a signal transmitter is determined by means of a highly accurate signal intensity meter respectively associated with each of a plurality of relay stations. For the purpose of intensity meter calibration, a central station emits a calibration signal periodically or upon receiving an alarm signal from the signal transmitter. The calibration signal is received by each of the relay stations and its intensity is measured by the respective intensity meter. The relay stations themselves, however, are not equipped with means for broadcasting of a calibration signal, nor would the broadcasting of a calibration signal by the relay stations bring about any positive technical effect in the context of the third embodiment of Feng.

In view of the generic incongruousness of the second and third embodiment of Feng, Applicant is of the firm belief that it is inappropriate and non-obvious to combine their respective teachings. It follows that Feng either fails to teach the claimed means to broadcast a calibration signal (third embodiment) or fails to teach the claimed means to measure a power level of the received calibration signal and to transmit measurement results to another network device (second embodiment).

Applicants' invention as recited in claim 18 is directed toward a device for a wireless network. More specifically, the claim recites:

> Network device for a wireless network, characterized by means to initiate a measurement phase, to initiate a reporting phase and to perform a creation of a topology map on basis of measurement results received during the reporting phase.

As noted above with regard to claim 1, Wellard fails to teach the measurement and reporting phases of claim 18 or to suggest any advantages that may arise from such phases as does the present application (cf. p. 3, final paragraph as well as the paragraph bridging pages 6 and 7 of the present application). In addition, Wellard does not teach a network device for a wireless network having means to perform a creation of a topology map, the CCU of Wellard being a strictly wired device.

Claim 18 is amended simply to clarify the use of the "network device." As discussed above and as exemplified in column 5, lines 10-57, Wellard's CCU 14 is responsible for creating a topology map. CCU 14, however, is not a network device for a wireless network since it is not taught as having any wireless networking capabilities. Applicant is thus of the firm belief that the subject matter of claim 18 is neither anticipated nor rendered obvious by the teachings of Wellard, even without amendment. Nonetheless, Applicant has voluntarily chosen to amend the preamble of claim 18 so as to emphasize the aforementioned distinction.

Regarding the Pelech and Jennings, III references, Applicants note that these references were cited by the Examiner merely in relation to limitations included in Applicants' dependent claims. Neither Pelech nor Jennings, III can cure the deficiencies of Wellard and Feng with respect to claims 1, 13 and 18.

Accordingly, Applicants submit that claims 1, 13 and 18 are patentable over Wellard, Feng, Pelech and Jennings, III, taken either alone or in combination.

Claims 2-12 depend on claim 1. Since claim 1 is believed to be patentable over the cited references, claims 2-12 are believed to be patentable over the cited references on the basis of their dependency on claim 1.

Claims 14-17 depend on claim 13. Since claim 13 is believed to be patentable over the cited references, claims 14-17 are believed to be patentable over the cited references on the basis of their dependency on claim 13.

Applicants respectfully submit that all of the claims now pending in the application are in condition for allowance, which action is earnestly solicited.

Statements appearing above with respect to the disclosures in the cited references represent the present opinions of the Applicants' undersigned attorney, and, in the event that the Examiner disagrees with any such opinion, it is respectfully requested that the Examiner specifically indicate those portions of the reference providing the basis for a contrary view.

It is submitted that these claims, as originally presented, are patentably distinct over the prior art cited by the Examiner, and that these claims were in full compliance with the requirements of 35 U.S.C. 112. Changes to these claims, as presented herein, are not made for the purpose of patentability within the meaning of 35 U.S.C. sections 101, 102, 103 or 112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

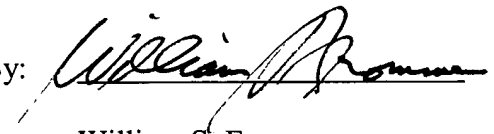
If any issues remain, or if the Examiner has any further suggestions, he/she is invited to call the undersigned at the telephone number provided below.

The Examiner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account No.50-0320.

The Examiner's consideration of this matter is gratefully acknowledged.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP

By: 

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